

modifying a portion of said coding sequence to yield a modified sequence which contains a greater number of codons preferred by the intended plant host than did said coding sequence and fewer plant polyadenylation signals than said coding sequence.

40. A synthetic gene which is derived from a *Bacillus thuringiensis* insecticidal protein toxin gene and which is more highly expressed in plants, wherein the coding sequence of said synthetic gene is modified to contain:

- a) a greater number of codons preferred by the intended plant host than said insecticidal protein toxin gene; and
b) fewer polyadenylation signal sequences than said insecticidal protein toxin gene.

41. A modified chimeric gene comprising a promoter which functions in plant cells operably linked to a structural coding sequence and a 3' non-translated region comprising a polyadenylation signal which functions in plants to cause the addition of polyadenylate nucleotides to the 3' end of the RNA, wherein said structural coding sequence encodes an insecticidal protein derived from *B.t. tenebrionis*, said structural coding sequence comprising the following sequence:

1 ATGACTGCAGACAACAACACCGAAGCCCTCGACAGTTCTA 40
41 CCACTAAGGATGTTATCCAGAAGGGTATCTCCGTTGTGGG 80
81 AGACCTCTTGGGCGTGGTTGGATTTCCCTTCGGTGGAGCC 120
121 CTCGTGAGCTTCTATACAAACTTTCTCAACACCATTGTC 160
161 CAAGCGAGGACCCTTGGAAAGCATTTCATGGAGCAAGTTGA 200
201 AGCTCTTATGGATCAGAAGATTGCAGATTATGCCAAGAAC 240
241 AAGGCTTTGGCAGAACTCCAGGGCCTTCAGAACAAATGTGG 280
281 AGGACTACGTGAGTGCATTGTCCAGCTGGCAGAAGAACCC 320

321 TGT TAGCTCCAGAAATCCTCACAGCCAAGGTAGGATCAGA 360
361 GAGTTGTTCTCTCAAGCCGAATCCCACTTCAGAAATTCCA 400
401 TGCCTAGCTTTGCTATCTCCGGTTACGAGGTTCTTTTCCT 440
441 CACTACCTATGCTCAAGCTGCCAACACCCACTTGTTTCTC 480
481 CTTAAGGACGCTCAAATCTATGGAGAAGAGTGGGGATACG 520
521 AGAAAGAGGACATTGCTGAGTTCTACAAGCGTCAACTTAA 560
561 GCTCACCCAAGAGTACACTGACCATTGCGTGAAATGGTAT 600
601 AACGTTGGTCTCGATAAGCTCAGAGGCTCTTCCTACGAGT 640
641 CTTGGGTGAACTTCAACAGATACAGGAGAGAGATGACCTT 680
681 GACTGTGCTCGATCTTATCGCACTCTTTCCTTGACGAT 720
721 GTGAGACTCTACCCAAAGGAAGTGAAAAGTGAAGCTTACCA 760
761 GAGACGTGCTCACTGACCCTATTGTTCGGAGTCAACAACCT 800
801 TAGGGGTTATGGAAGTACCTTCAGCAATATCGAAAAGTAC 840
841 ATTAGGAAACACATCTCTTCGACTATCTTCACAGAATTC 880
881 AATTCACACAAGGTTTCAACCAGGATACTATGGTAACGA 920
921 CTCCTTCAACTATTGGTCCGGTAACTATGTTTCCACCAGA 960
961 CCAAGCATTGGATCTAATGACATCATCACATCTCCCTTCT 1000
1001 ATGGTAACAAGTCCAGTGAACCTGTGCAGAACCTTGAGTT 1040
1041 CAACGGCGAGAAAGTCTATAGAGCCGTCGAAACACCAAT 1080
1081 CTCGCTGTGTGGCCATCCGCAGTTTACTCAGGCGTCACAA 1120
1121 AGGTGGAGTTTAGTCAGTATAACGATCAGACCGATGAGGC 1160
1161 CAGCACCCAGACTTACGACTCCAAACGTAACGTTGGCGCA 1200
1201 GTCTCTTGGGATTCTATCGACCAATTGCCTCCAGAAACCA 1240
1241 CAGACGAACCATTTGGAGAAGGGCTACAGCCACCAACTTAA 1280
1281 CTATGTGATGTGCTTCTTGATGCAAGGTTCCAGAGGGACC 1320
1321 ATTCCAGTGTTGACCTGGACACACAAGTCCGTGGACTTCT 1360

1361 TCAACATGATCGATAGCAAGAAGATCACTCAACTTCCCTT 1400
1401 GGTGAAAGCCTACAAGCTGCAATCTGGTGCTTCCGTTGTC 1440
1441 GCAGGTCCCAGATTCACTGGAGGTGACATCATCCAGTGCA 1480
1481 CAGAGAACGGCAGCGCAGCTACTATCTACGTGACACCTGA 1520
1521 TGTGTCTTACTCTCAGAAGTACAGGGCACGTATTCATTAC 1560
1561 GCATCTACCAGCCAGATCACCTTCACACTCAGCTTGGATG 1600
1601 GAGCACCTTCAACCAGTATTACTTTGACAAGACCATCAA 1640
1641 CAAAGGTGACACTCTCACATACAATAGCTTCAACTTGGCA 1680
1681 AGTTTCAGCACACCATTGAACTCTCAGGCAACAATCTTC 1720
1721 AGATCGGCGTCACCGGTCTCAGCGCCGGAGACAAAGTCTA 1760
1761 CATCGACAAGATTGAGTTCATCCCAGTGAAC 1791.

42. A modified chimeric gene comprising a promoter which functions in plant cells operably linked to a structural coding sequence and a 3' non-translated region comprising a polyadenylation signal which functions in plants to cause the addition of polyadenylate nucleotides to the 3' end of the RNA, wherein said structural coding sequence encodes an insecticidal protein derived from *B.t. entomocidus*, said structural coding sequence comprising the following sequence:

1 ATGGAGGAGAACCAACCAAAACCAATGCATTCCATACAAC 40
41 GCTTGAGTAACCCAGAAGAGGTATTGCTTGATGGAGAACG 80
81 CATTTCAACCGGTAACCTCTCCATCGACATCTCCTTGTC 120
121 TTGGTCCAGTTTCTGGTCAGCAACTTCGTGCCAGGTGGTG 160
161 GGTTCCTTGTCGGAATAATTGACTTCGTCTGGGGTATCGT 200
201 TGGTCCATCTCAATGGGATGCATTCCTGGTGCAAATTGAG 240
241 CAGTTGATCAACGAGAGGATCGCTGAGTTCGCCAGGAACG 280
281 CTGCCATCGCTAACTTGGAAGGATTGGGCAATAACTTCAA 320
321 CATCTATGTGGAGGCCTTCAAAGAGTGGGAAGAGGACCCT 360

361 AACAAACCCAGAGACCCGCACTAGGGTGATCGACAGATTCA 400
401 GAATCTTGGACGGCCTCTTGGAGAGAGATATCCCATCCTT 440
441 CAGAATCTCTGGCTTCGAAGTTCCTCTCTTGTCCGTGTAC 480
481 GCTCAAGCAGCTAATCTTCACCTCGCTATCCTTCGAGACA 520
521 GTGTCATCTTTGGGGAAAGGTGGGGATTGACCACTATCAA 560
561 CGTCAATGAGAATTACAACAGACTTATCAGGCACATTGAC 600
601 GAGTACGCCGACCACTGTGCTAACACCTACAACCGTGGCT 640
641 TGAACAATCTCCCTAAGTCTACTTATCAAGATTGGATTAC 680
681 CTACAACAGGTTGAGGAGAGACTTGACCCTCACAGTTTTG 720
721 GACATTGCAGCTTTCTTCCCGAACTATGACAACAGGAGAT 760
761 ACCCTATCCAACCAGTGGGTCAACTTACCAGAGAAGTCTA 800
801 TACTGACCCACTTATCAACTTCAACCCTCAGTTGCAAAGT 840
841 GTCGCCCAACTTCCCACATTCAACGTCATGGAGTCCAGCC 880
881 GTATCAGGAACCCACACTTGTTTGACATCTTGAACAACCT 920
921 TACTATCTTCACCGATTGGTTCAGCGTTGGGCGTAACTTC 960
961 TATTGGGGTGGACACAGGGTCATCTCCTCTCTTATTGGAG 1000
1001 GTGGGAACATTACCTCTCCTATCTATGGACGTGAGGCAAA 1040
1041 CCAGGAGCCACCACGTAGTTTCACCTTCAACGGTCCAGTC 1080
1081 TTCAGAACCTTGTCTAACCTTACCTTGAGATTGCTCCAGC 1120
1121 AACCTTGGCCAGCTCCACCTTTCAACCTTAGAGGTGTTGA 1160
1161 GGGCGTTGAGTTCTCTACTCCTACCAACTCCTTCACTTAC 1200
1201 AGAGGTAGAGGAACCGTTGATTCCTTGACCGAACTCCAC 1240
1241 CAGAGGACAATAGCGTGCCACCCAGGGAAGGCTACTCCCA 1280
1281 CAGGTTGTGCCACGCAACCTTCGTGCAGCGTTCCGGAAC 1320
1321 CCATTCTCTACTACAGGAGTTGTGTTCTCATGGACTGATC 1360
1361 GTAGTGCTACTCTCACTAATACCATTGATCCCGAGAGGAT 1400

1401 CAATCAAATCCCATTGGTCAAGGGTTTCCGTGTGTGGGGA 1440
1441 GGAACCTTCTGTCATCACAGGACCAGGCTTCACAGGAGGTG 1480
1481 ATATTCTTAGAAGAAACACTTTTGGCGACTTTGTGAGCCT 1520
1521 CCAAGTTAACATCAACTCTCCAATTACTCAAAGATATCGT 1560
1561 CTCAGGTTTTCGTTACGCATCTTCCCGTGACGCTAGAGTCA 1600
1601 TCGTGCTCACCGGAGCAGCTTCTACCGGTGTCGGTGGACA 1640
1641 AGTCTCCGTGAACATGCCACTCCAGAAGACTATGGAGATC 1680
1681 GGCGAGAACTTGACATCCAGGACCTTCAGATACACCGACT 1720
1721 TCTCTAACCCTTTTCAGTTTCCGTGCCAACCTTGACATCAT 1760
1761 TGGCATTAGCGAACAACCTCTCTTTGGAGCTGGTAGCATC 1800
1801 TCATCTGGCGAATTGTACATTGACAAGATTGAGATCATTC 1840
1841 TTGCCGACGCTACCTTCGAGGCTGAGTCTGACCTTGAGAG 1880
1881 AGCCCAGAAGGCTGTGAACGCCCTCTTTACCTCCTCTAAT 1920
1921 CAGATTGGCTTGAAAACCTGACGTTACTGACTATCACATTG 1960
1961 ACCAAGTGTCCAACCTTGGTCGACTGCCTTAGCGATGAGTT 2000
2001 CTGCCTCGACGAGAAGCGTGAACCTCTCCGAGAAAGTTAAA 2040
2041 CACGCCAAGCGTCTCAGCGACGAGAGGAATCTCTTGCAAG 2080
2081 ACCCCAACCTTCAGAGGCATCAACAGGCAGCCAGACCGTGG 2120
2121 TTGGAGAGGAAGCACCGACATCACCATCCAAGGAGGCGAC 2160
2161 GATGTGTTCAAGGAGAACTACGTCACCCTCCCAGGAACTG 2200
2201 TGGACGAGTGCTACCCTACCTACTTGTACCAGAAGATCGA 2240
2241 TGAGTCCAAACTCAAAGCCTACACCAGGTATGAACTTAGA 2280
2281 GGCTACATCGAAGACAGCCAAGACCTTGAAATCTACCTCA 2320
2321 TCAGGTACAATGCCAAGCACGAGATCGTGAATGTCCCAGG 2360
2361 TACTGGTTCCCTCTGGCCACTTTCTGCCCCAAATGCCCAT 2400
2401 GGGAAGTGTGGAGAGCCTAACAGATGCGCTCCACACCTTG 2440
2441 AGTGGAATCCTGACTTGGACTGCTCCTGCAGGGATGGCGA 2480

2481 GAAGTGTGCCACCATTCATCACTTCACCTTGGACATC 2520
2521 GATGTGGGATGTACTGACCTGAATGAGGACCTCGGAGTCT 2560
2561 GGGTCATCTTCAAGATCAAGACCCAAGACGGACACGCAAG 2600
2601 ACTTGGCAACCTTGAGTTTCTCGAAGAGAAACCATTGCTC 2640
2641 GGTGAAGCTCTCGCTCGTGTGAAGAGAGCAGAGAAGAAGT 2680
2681 GGAGGGACAAACGTGAGAACTCCAACCTCGAGACTAACAT 2720
2721 CGTTTACAAGGAGGCCAAAGAGTCCGTGGATGCTTTGTTC 2760
2761 GTGAACTCCCAATATGATAGGTTGCAAGTGGACACCAACA 2800
2801 TCGCCATGATCCACGCTGCAGACAAACGTGTGCACAGGAT 2840
2841 TCGTGAGGCTTACTTGCCTGAGTTGTCCGTGATCCCTGGT 2880
2881 GTGAACGCTGCCATCTTCGAGGAACTTGAGGGACGTATCT 2920
2921 TTACCGCATACTCCTTGTACGATGCCAGAAACGTCATCAA 2960
2961 GAACGGTGACTTCAACAATGGCCTCTTGTGCTGGAATGTG 3000
3001 AAAGGTCATGTGGACGTGGAGGAACAGAACAATCACCGTT 3040
3041 CCGTCCTGGTTATCCCTGAGTGGGAAGCTGAAGTGTCCCA 3080
3081 AGAGGTTAGAGTCTGTCCAGGTAGAGGCTACATTCTCCGT 3120
3121 GTGACCGCTTACAAGGAGGGATACGGTGAGGGTTGCGTGA 3160
3161 CCATCCACGAGATCGAGGACAACACCGACGAGCTTAAGTT 3200
3201 CTCCAACCTGCGTCGAGGAAGAAGTCTATCCCAACAACACC 3240
3241 GTTACTTGCAACAACACTACACTGGGACCCAGGAAGAGTACG 3280
3281 AAGGTACCTACACTAGCCGTAACCAAGGTTACGACGAAGC 3320
3321 TTACGGAAACAATCCTTCCGTTCCTGCTGACTATGCCTCC 3360
3361 GTGTACGAGGAGAAAATCCTACACAGATGGCAGACGTGAGA 3400
3401 ACCCTTGCGAGTCCAACAGAGGTTACGGTGACTACACACC 3440
3441 ACTTCCAGCAGGCTATGTTACCAAGGACCTTGAGTACTTT 3480
3481 CCTGAGACCGACAAAGTGTGGATCGAGATCGGTGAAACCG 3520

3521 AGGGAACCTTCATCGTGGACAGCGTGGAGCTTCTCTTGAT 3560
3561 GGAGGAA 3567.

43. A modified chimeric gene comprising a promoter which functions in plant cells operably linked to a structural coding sequence and a 3' non-translated region comprising a polyadenylation signal which functions in plants to cause the addition of polyadenylate nucleotides to the 3' end of the RNA, wherein said structural coding sequence encodes a *B.t.* P2 insecticidal protein, said structural coding sequence comprising the following sequence:

1 ATGGACAACAACGTCTTGA[.]ACTCTGGTAGAACAACCATCT[.] 40
41 GCGACGCATACAACGTCTGGCTCACGATCCATT[.]CAGCTT[.] 80
81 CGAACACAAGAGCCTCGACA[.]CTATTCAGAAGGAGTGGATG[.] 120
121 GAATGGAAACGTACTGACC[.]ACTCTCTCTACGTCGCACCTG[.] 160
161 TGGTTGGAACAGTGTCCAGCTTCCTTCTCAAGAAGGTCGG[.] 200
201 CTCTCTCATCGGAAAACGTATCTTGTCCGAACTCTGGGGT[.] 240
241 ATCATCTTTCCATCTGGGTCCACTAATCTCATGCAAGACA[.] 280
281 TCTTGAGGGAGACCGAACAGTTTCTCAACCAGCGTCTCAA[.] 320
321 CACTGATACCTTGGCTAGAGTCAACGCTGAGTTGATCGGT[.] 360
361 CTCCAAGCAAACATTCGTGAGTTCAACCAGCAAGTGGACA[.] 400
401 ACTTCTTGAATCCA[.]ACTCAGAATCCTGTGCCTCTTTCCAT[.] 440
441 CACTTCTTCCGTGAACACTATGCAGCAACTCTTCCTCAAC[.] 480
481 AGATTGCCTCAGTTTCAGATTCAAGGCTACCAGTTGCTCC[.] 520
521 TTCTTCCACTCTTTGCTCAGGCTGCCAACATGCACTTGTC[.] 560
561 CTTCATACGTGACGTGATCCTCAACGCTGACGAATGGGGA[.] 600
601 ATCTCTGCAGCCACTCTTAGGACATACAGAGACTACTTGA[.] 640
641 GGA[.]ACTACACTCGTGATTACTCCA[.]ACTATTGCATCAACAC[.] 680
681 TTATCAGACTGCCTTTCGTGGACTCAATACTAGGCTTCAC[.] 720

721 GACATGCTTGAGTTCAGGACCTACATGTTTCCTTAACGTGT 760
761 TTGAGTACGTCAGCATTGAGTCTCTTCAAGTACCAGAG 800
801 CTTGATGGTGTCTCTGGAGCCAATCTCTACGCCTCTGGC 840
841 AGTGGACCACAGCAAACCTCAGAGCTTCACAGCTCAGAACT 880
881 GGCCATTCTTGTATAGCTTGTTCCAAGTCAACTCCAACATA 920
921 CATCTCTCAGTGGTATCTCTGGGACCAGACTCTCCATAACC 960
961 TTTCCCAACATTGGTGGACTTCCAGGCTCCACTACAACCC 1000
1001 ATAGCCTTAACCTCTGCCAGAGTGAACCTACAGTGGAGGTGT 1040
1041 CAGCTCTGGATTGATTGGTGCAACTAACTTGAACCACAAC 1080
1081 TTCAATTGCTCCACCGTCTTGCCACCTCTGAGCACACCGT 1120
1121 TTGTGAGGTCTCTGGCTTGACAGCGGTACTGATCGCGAAGG 1160
1161 AGTTGCTACCTCTACAAACTGGCAAACCGAGTCCTTCCAA 1200
1201 ACCACTCTTAGCCTTCGGTGTGGAGCTTCTCTGCACGTG 1240
1241 GGAATTCAAACCTACTTTCCAGACTACTTCATTAGGAACAT 1280
1281 CTCTGGTGTTCCTCTCGTCATCAGGAATGAAGACCTCACC 1320
1321 CGTCCACTTCATTACAACCAGATTAGGAACATCGAGTCTC 1360
1361 CATCCGGTACTCCAGGAGGTGCAAGAGCTTACCTCGTGTC 1400
1401 TGTCCATAACAGGAAGAACAACATCTACGCTGCCAACGAG 1440
1441 AATGGCACCATGATTCACCTTGCACCAGAAGATTACACTG 1480
1481 GATTCACCATCTCTCCAATCCATGCTACCCAAGTGAACAA 1520
1521 TCAGACACGCACCTTCATCTCCGAAAAGTTCGGAAATCAA 1560
1561 GGTGACTCCTTGAGGTTCGAGCAATCCAACACTACCGCTA 1600
1601 GGTACACTTTGAGAGGCAATGGAAACAGCTACAACCTTTA 1640
1641 CTTGAGAGTTAGCTCCATTGGTAACTCCACCATCCGTGTT 1680
1681 ACCATCAACGGACGTGTTTACACAGTCTCTAATGTGAACA 1720
1721 CTACAACGAACAATGATGGCGTTAACGACAACGGAGCCAG 1760
1761 ATTCAGCGACATCAACATTGGCAACATCGTGGCCTCTGAC 1800